ABSTRACT OF THE DISCLOSURE

The present invention provides a semiconductor device comprising as a core substrate a high thermo conductive ceramic substrate having circuit patterns on opposed surfaces. The high thermo conductive ceramic substrate has on one surface a first circuit board of at least one layer having a first cavity structure, and on the other surface a second circuit board of at least one layer having a second cavity structure. A first active element is mounted on the circuit pattern on the high thermo conductive ceramic substrate within the first cavity, a second active element is mounted on the circuit pattern on the high thermo conductive ceramic substrate within the second cavity, an external electrode is integrated with the surface of the second circuit board, and the first circuit board surface is equipped with a cap or sealed with resin. A heat dissipation via is formed on the second circuit board, the high thermo conductive ceramic substrate and the external electrode on the surface of the second circuit board are connected thermally to each other, and heat of at least one active element selected from the first active element and the second active element is dissipated outward through the high thermo conductive ceramic substrate, the heat dissipation via and the external electrode on the surface of the second circuit board. The semiconductor device is downsized while securing transverse strength and heat dissipation characteristics of a heat-generating semiconductor element.